

AS

Notice of Allowability

Application No.

09/904,993

Examiner

Robert R. Koehler

Applicant(s)

PREIKSCHAT ET AL.

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicants' Amendment and Information Disclosure Statement filed on December 4, 2003.
2. ☒ The allowed claim(s) is/are 1-46 and 48-79.
3. ☒ The drawings filed on 17 October 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/171,558.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 05202003; 12042003
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Robert R. Koehler

**ROBERT R. KOEHLER
PRIMARY EXAMINER**

ART UNIT 1775

DETAILED ACTION***Terminal Disclaimer***

The terminal disclaimer filed on December 4, 2003 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,287,704 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

Claims 1 to 46 and 48 to 79 are allowed.

The following is an examiner's statement of reasons for allowance: **1.** The Examiner has reviewed two German publications for standardized corrosion test procedures involving chromated coatings of zinc on iron or steel substrates in order to develop a more complete understanding of applicants' claimed requirement that the inventive conversion layer presents a corrosion protection of about 100 to 1000 hours "until first attack according to DIN 50961 Chapter 10." The bibliographic information for these two German publications is presented in the attached "Notice of References Cited" (PTO-892). The Examiner believes that all independent claims (as well as the dependent claims) containing the wording "until first attack according to DIN 50961 Chapter 10" are allowable over the prior art because the applicants have established a higher requirement for acceptable conversion layer performance in comparison to the corrosion test results and the corrosion testing criterion presented in the prior art. The Examiner interprets the claim wording "until first attack" to be that particular condition of the conversion layer in a standard corrosion test which presents *the very first indication of deterioration in accordance with the guidelines set forth in DIN 50961 Chapter 10*. In other words, the "very first indication of deterioration" occurs much earlier than the established (prior art) criterion of "5% corrosion" which also suggests that a much smaller surface area has deteriorated within a stated time period. In the Declaration of Sudha Damji, pages 3 and 4 in

Art Unit: 1775

Exhibit A, the corrosion test results are expressed as "Hours to 5% white corrosion"; see Table 2. The Examiner believes that those reported corrosion times in the last column represent much more extensive deterioration of the test specimen than is being claimed by the applicants in this patent application as well as in the parent application (now U.S. Pat. No. 6,287,704). The applicants require that a test specimen having an improved chromium-containing conversion layer *must not experience any corrosive attack until at least about 100 hours of exposure in a standard corrosion test environment*. The Declaration by Sudha Damji fails to show that the prior art test specimens are identical to (or similar to) applicants' claimed chromium-containing conversion layer products because the corrosion test data of Damji does not reveal the extent of surface corrosion after 100 hours of exposure to the standard corrosion test environment. The Examiner believes that applicants' claimed chromium-containing conversion layer does perform according to the statements presented in the Rule 1.132 Declaration of Patricia Preikschat dated December 4, 2002. The Examiner also believes that applicants have discovered a subtle, yet important, chromium-containing conversion layer structure having the unknown property of resisting first corrosive attack until at least 100 hours. Of course, the claimed chromium-containing conversion layer will continue to deteriorate in a standard corrosion test environment for testing times significantly longer than 100 hours. The Damji Declaration only shows that chromated zinc surfaces experience "5% white corrosion" after extremely long exposure times, but the applicants have shown that an improved, unobvious chromium-containing conversion layer structure can be produced having the property of resisting first corrosive attack until at least about 100 hours. 2. The Damji Declaration provides independent verification of applicants' claimed requirement that the chromium(III) complex must have ligand replacement kinetics more rapid than the fluoride replacement kinetics in chromium(III)-fluorocomplexes. Paragraphs 13, 14, and 15 (pages 4 and 5) of the Preikschat Declaration state that a thicker, more corrosion-resistant Cr(III) conversion layer is formed on a

Art Unit: 1775

zinc surface when the rate of reaction for conversion layer formation (k_2 in the Preikschat Declaration) is regulated by selecting a chemical species having the appropriate ligand replacement kinetics to form the Cr(III)-complex in solution. Although fluoride ions could be used in the conversion coating solutions, coating concentrates, and coating methods claimed by the applicants, the corrosion data presented in the Damji Declaration clearly show that much better, long-term corrosion resistance is offered by conversion layers which were produced using coating solutions *without fluoride ions*. The Damji Declaration at paragraph 8 (page 2) states that three conversion coating solutions were prepared and utilized according to Examples 1 to 3 in U.S. Pat. No. 6,287,704. The Examiner points out that Example 1 of the '704 patent used a coating solution which contained fluoride ions, and the resulting conversion layer exhibited significantly *lower time* to 5% white corrosion compared to the conversion layers produced by coating solutions without fluoride ions (Examples 2 and 3 in the '704 patent); see sample numbers (6), (7), and (8) in Table 2 of the Damji Declaration. **3.** The Examiner continues to believe that all of applicants' independent claims directed to a *method* for producing a chromium(VI)-free conversion layer, a *concentrate* for producing a passivation solution for surfaces of zinc or zinc alloys, and a *passivation bath* for passivating a metal surface of zinc, cadmium, aluminum, or alloys thereof (as well as the respective dependent claims) are allowable over the prior art because each of those independent claims contains the requirement that *a suitable chemical species must be selected such that a metallic surface is treated with a solution of at least one chromium(III) complex wherein the chromium(III) complex must have ligand replacement kinetics more rapid than the fluoride replacement kinetics in chromium(III)-fluorocomplexes*. The Examiner completely agrees with statements in the Preikschat Declaration (paragraph 18 on page 6) that a person skilled in the art of conversion coating technology would not have been motivated to select the proper chemical species in order to achieve a suitable rate of reaction k_2 when forming a chromium-containing conversion layer.

Art Unit: 1775

The Examiner performed a lengthy prior art search in the appropriate chemical fields in order to determine whether other chemical researchers had published any information or experimental data concerning the chemistry of chromium(III) complexes in aqueous solutions, and no suitable references could be found. Therefore, the *step of selecting a suitable chemical species in order to meet the applicants' claimed requirement of obtaining suitable ligand replacement kinetics for Cr(III) complexes* is not taught or reasonably suggested by the prior art. Although applicants' method claims, conversion coating composition claims, and concentrate composition claims can include fluoride ions, the Examiner continues to believe that the amount of any fluoride ion or fluorine-containing chemical species must be sufficiently low such that the method, conversion coating solution, or coating concentrate can produce a chromium-containing conversion layer having the property of resisting first corrosive attack for at least about 100 hours.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

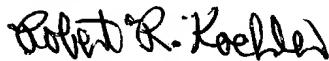
Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Robert Koehler whose telephone number is **(571) 272-1536**. The Examiner can normally be reached on Tuesday to Friday from 9:30 AM to 7:00 PM. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on **(571) 272-1535**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Art Unit: 1775

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).



ROBERT R. KOEHLER
PRIMARY EXAMINER

Art Unit 1775
March 11, 2004